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**IMPLANTABLE MEDICAL DEVICE EMPLOYING  
SONOMICROMETER OUTPUT SIGNALS FOR DETECTION  
AND MEASUREMENT OF CARDIAC MECHANICAL FUNCTION**

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**ABSTRACT OF THE DISCLOSURE**

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Implantable medical devices (IMDs) for detection and measurement of cardiac mechanical and electrical function employ a system and method for determining mechanical heart function and measuring mechanical heart performance of upper and lower and left and right heart chambers without intruding into a left heart chamber through use of a dimension sensor. The dimension sensor or sensors comprise at least a first sonomicrometer piezoelectric crystal mounted to a first lead body implanted into or in relation to one heart chamber that operates as an ultrasound transmitter when a drive signal is applied to it and at least one second sonomicrometer crystal mounted to a second lead body implanted into or in relation to a second heart chamber that operates as an ultrasound receiver.